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ABSTRACT

Manpower studies carried out in Turkey in the 1980s show some critical shortages in the number of technicians, the so-called middle element. Recent attempts have been made to increase the numbers of the badly needed technical middle elements between engineers and skilled and semiskilled workers as well as those at lower technical levels. Other activities have been aimed at training those without vocations. As part of its policy framework to solve unemployment, the Turkish government has undertaken a skill-acquisition scheme to meet training and learning needs, employment counseling, the initiation of a number of supportive agencies, special projects for job creation, a Labor Market Information System, and measures for job preservation and regulating attempts. Improvement activities directed at vocational and technical education at secondary and lower levels have included the Industrial Schools Project to develop secondary vocational education and the Nonformal Vocational Training Project. Assistance has been given to nonformal vocational training institutions. Developmental activities at the postsecondary vocational and technical education level include the Technician Training Project and continuation of the improvement attempts at higher vocational schools through the extension of technical assistance activities. (YLB)

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VOCATIONAL AND TECHNICAL EDUCATION IN TURKEY: SOME RECENT DEVELOPMENTS

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I. Introduction

Within the last three decades, Turkey has been one of the world's fast developing countries. Between the year 1960 and 1974, the economy of the country showed an average expansion of 6.0 to 7.0 percent annually. The contributions of the continuously high levels of investment and consumption in public and private sectors to the growth rates in the Gross National Product were very impressive.

Although these growth rates were adversely affected by the oil crises between 1974 and 1980, the Government intervention on inflation seemed to produce some excellent results in 1982, lowering the rate from 101 percent in 1980 to about 25 percent in 1982. At the same time some increase was noted in the Gross Domestic Product, growing from 4.6 percent to 5.6 percent between the years 1982 and 1984.

There seemed to be some other pleasing changes in the economy of the country: while the sectors of manufacturing, mining, power and construction showed an unimpressive combined figure of 16 percent in 1950's, they seemed to have more than doubled themselves by 1984, when they formed 35 percent of all sectors. The industrial production noted an increase of 7.6 percent the same year. The positive developments in economy continued during the following years and the growth rate in 1986, although it was set to be 5.5 percent, rose up to almost 8.0 percent. A similar type of growth rate is expected for the year 1987.

Despite such encouraging developments in economy, certain declines were experienced in the productivity of investments which where explained with the inadequate industrial training attempts and the poor management approaches existing in the industrial circles. The outcome of a number of recent research attempts pointed to some critical manpower shortages in exporting industry areas, highly complex production techniques, sophisticated equipment and high and precise standards for quality control. It was with the impact of the outcome of such studies that the Turkish Government and the Council of Higher Education of Turkey decided to start a number of improvement efforts aimed at vocational technical education and training activities at various levels.

The aim of this presentation is, firstly, to give some summary information in regard to the needs of Turkey for technical and skilled manpower at different levels of development and, secondly, to discuss the somewhat recent attempts in the country to increase the numbers of the badly-needed technical middle elements between engineers and skilled and semi-skilled workers as well as those at lower technical levels, and the other activities aimed at training those without vocations. Such discussion will be followed by a summarizing conclusion that will attempt also to give some projections about the technical manpower outlook of Turkey in the future years.

II. Some Background Information on Turkey's Needs

As you may well know, in the year 1923, under the able leadership of Atatürk, the Turkish Republic started her existence. Since that date, the population of Turkey increased more than four times, from 12 million to 52 million today.

While only 24.2 percent of all citizens resided in large cities and towns and 75.8 percent in villages and other rural areas, in the 50's those living in urban centers had risen to 43.9 percent in the 1980's. This change was mainly the result of a number of from-village-to-city migrations starting in the 50's and continuing to this day, altering the looks of the three largest cities in Turkey - Ankara, Istanbul and Izmir - to such an extent that presently more than half of their residential areas may be classified as shanty-towns, needing extra attention from the city authorities for a number of understandable reasons.

The rapid and somewhat improper urbanization taking place mainly in large cities asked for immediate measures for job creation for the migrant workers, as well as requiring initiation of certain educational attempts to train these newcomers for skills suitable for such jobs. On the other hand, with the rapid increase in young population that seemed to surpass the limits of enrollment at the available institutions of higher learning, the only appropriate remedy seemed to be to increase the number of schools of vocational and technical nature. Thus, the schools of commerce and tourism more than doubled themselves between 1975 and 1982. By 1982, the number of students enrolled in secondary vocational and technical schools reached one third of the total enrollment at secondary education level.

The manpower studies carried out in the 1980's showed some critical shortages in the number of technicians, so-called middle element, whose presence is considered a must to increase production, to professionally handle expensive and complex equipment, to deal with precise measurement and quality control techniques. Table I below compares the numbers of engineers, technicians, foremen and supervisors in Turkey with those in a number of highly industrialized and industrializing countries.

TABLE I

Comparison of Selected Occupations in the Manufacturing Sector

		No per '000 in Manufacturing Sector		
Country	Year	Engineers	Technicians	Foremen/ Supervisors
United States (a)	1970	33	24	47,0
West-Germany (a)	1970	22	35	10,0
Israel (a)	1972	14	37	19,0
Greece (a)	1971	5	2	4,0
Turkey (a)	1980	7	9	0,5

Sources: (a) Zymelman, M. Occupational Structures of Industries Education Department, The World Bank, Washington D.C., 1980.

(b) 1980 Census: State Institute of Statistics, Ankara, Turkey.

The figures in Table I clearly indicate that, in 1980, the proportions of engineers, technicians, foremen and supervisors per 1000 employees in Turkey's manufacturing sector were well below those in the United States, West-Germany and Israel.

An estimated account of labor demands and supply of selected occupational groups, including professional scientists and engineers, technicians, skilled and semi-skilled workers for a 10 year period between 1985 and 1995 is given in Table II.

TABLE II

Demands and Supply of Professional Scientists and Engineers, Technicians, Skilled and Semi-Skilled Workers in Industry in Turkey

1985-1995 ('000)

Occupational Category	Estimated Employment in 1985	Additional Demand for Labor due to Economic Growth and Attrition (a)	Additional Supply from Education and Training Institutions	Supply as % of Additional Demand
Professional Scientists and Engineers	178	175	120	69
Technicians	104	117	20	17
Skilled and Semi-Skilled Manual Workers	3211	2447	1430 (b)	58

(a) Excluding upgrading requirements.

(b) Not including on-the-job training.

Source: World Bank Mission for Technician Training Project in Turkey.

As can be seen from the projected figures in the table above, within the years ahead, the additional technical manpower demands well exceed the additional supply of scientists and engineers, technicians, skilled and semi-skilled workers in Turkey.

The various projects and schemes devised by the Council of Higher Education, The Ministry of National Education, Youth and Sports, and the Ministry of State, in a number of instances with the financial assistance of the World Bank, aiming to raise the number of technicians, trained at post-secondary level, and others trained at secondary education and basic skill levels have already started helping the manpower shortages in skilled labor in the country. The projected numbers of such personnel will be given later in the paper, in their respective sections.

The regulation and reform policies adopted by the Turkish Government in the year 1980, in order to improve the country's economy, aimed mainly at the following three basic goals:

1. Benefitting from existing market possibilities and influencing related factors in larger scales,

2. Adopting some new measures to secure the monetary balance,

3. Developing the export industry areas in order to raise the somewhat low levels of foreign currency flow and to create new employment possibilities.

Starting with these three goals, the Government, with the active participation of a number of related institutions, laid out the plans to develop and extend the industrial sector, especially the subsectors of manufacturing and those more related with exporting industries, through increasing production levels and the sensitivity on the quality of products, in order to compete better at the international markets.

The sectoral studies carried out with the above objectives in prospect pointed to the existence of the following principal factors, that contributed to the low levels of production in a number of export industry areas:

1. Shortages in skilled and technical manpower,

2. The low quality of pre-service industrial training programs,

3. The inadequacy of in-service industrial training programs.

These studies recommended that in manufacturing and export-related industries, the following basic elements of production will have to be guaranteed:

1. Control standards for high quality,

2. Modern production techniques,

3. Special equipment and machinery, necessary for advanced technologies.

III. Attempts to Combat Unemployment and to Relieve Shortages in Technical Manpower

At this point, I will present particulars of a series of either new or "developing-the-existing" training activities undertaken by the Ministry of State for Employment, Science and Technology, the Ministry of National Education, Youth and Sports, and the Council of Higher Education.

It should be appropriate to begin with the work of the Ministry of State since it deals with skill-acquisition schemes at lower levels, and then move up to those improvement activities undertaken at secondary technical and vocational level, and, lastly, to comment on the projects promoting the post-secondary vocational technical education.

A. A Policy Framework to Solve Unemployment

Following the adoption of a policy to combat unemployment, the Turkish Government tried to create a suitable atmosphere where new jobs can be originated, tried to eliminate some elements complicating the formation of new markets and put the labour market in line with the principle of free competition. Numerous projects were started, some of which in operational stage, and others in the pipe-line, that address a full range of job creation activities. Each individual project is an integral part of an overall scheme. Project groups receive priority in accordance with the following criteria:

- Projects to create maximum possible employment.
- Those identifying the needs of various groups in the labour market (youth, old age and disabled groups).
- Projects aiming at providing maximum possible income.
- Those insuring maximum marketing possibilities.
- Projects undertaken in seriously affected areas of the country.
- Those requiring minimum investment.
- Projects that can be completed within relatively shorter periods.
- Those aiming at developing the needed skills.
- Projects exploiting productively the potential resources of a region or area.

1. Training and Learning Needs

One of the recent undertakings by the Ministry of State to increase employment is called the "Skill-Acquisition Scheme." The program provides courses in order to ensure various skills for unemployed youth, that are valid in the labour market. With the help of such courses the unemployed young citizens may:

- find a job,
- start their own business, or
- increase their income by putting their free time to good use.

The Skill Acquisition Scheme Pilot Program I was started in 1986 in four cities, Ankara, Istanbul, Izmir and Nevşehir, where a total of 98 courses were provided with a duration of up to six months. By the end of December 1986, 1,900 young people had acquired necessary skills for a number of existing jobs. In January 1987, 1,776 graduates had acquired jobs.

The Skill Acquisition Scheme Pilot Program II extended the provision of training services to 37 provincial areas in the country, giving priority to the disadvantaged regions. The program, which is now underway, is comprising a total number of 394 courses training 9,600 youth. The Ministry is opening these courses in accordance with the specific needs of local markets and with the help of employers who provide the premises, training aids, equipment, etc.

The Ministry of State has recently set up a company called IVES (Employment Foundation Training Systems, Ltd.), with the aim of either purchasing the commercial training sets to be employed in the Skill Acquisition Programs, or adapting them to the specific needs of the youth, or even developing new sets, wherever and whenever necessary, in the future years. Another activity undertaken by the Ministry has been a pilot program called "Skilled Promotion Scheme", to be introduced following the successful outcomes of the two Skill Acquisition Scheme Pilot Programs, which will involve more active participation of employers with all their means in skill training activities. With the help of the Ministry the employers will also be able to benefit from the instructional facilities of vocational schools and from those possibilities existing at private educational institutions.

A vital characteristic of the Skill Promotion Scheme has been the incorporation of a skill training to help the youngsters handle computers to apply new technologies to the traditional employment schemes. To facilitate the acquisition of such skills, a low cost standard microcomputer was designed and a prototype developed. Legal rights for manufacturing this microcomputer are granted by the Ministry to interested hardware companies.

Another improvement activity undertaken by the Ministry of State was the provision of management training courses for high level administrators of a number of public institutions under the Ministry. The courses were planned and carried out by the Industrial and Management Institute within the Turkish Scientific and Research Council in corporation with Employment Foundation Training Systems, Ltd. The same courses will later be extended to the needs of other public and also to private enterprises.

Ministry of State drafted a new vocational training and rehabilitation scheme with the aim of increasing employment opportunities for the disabled. Training and rehabilitation services are scheduled to be carried out by the Foundation for Strengthening the Disabled which has already established a Vocational Rehabilitation Center for this purpose. The center with its modern approaches to vocational counseling and rehabilitation serves also as a fine example for other vocational training institutions.

2. Employment Counseling

Presently there are numbers of unemployed people in Turkey, among them potentials for entrepreneurship, waiting for productive assistance from government institutions to join the work force. Traditionally, the Turkish people expect to receive employment counseling and guidance services from the Government.

The Ministry of State recently took the initiative to have a comprehensive employment counseling system to be designed that will provide reliable information and guidance on the available jobs country-wide and also the assistance to those that may wish to start their own business. The plan called "Counseling System for Potential Jobs" attempts to orientate the secondary school and college students on the proper selection of suitable professions through adequate assessment of their interests, abilities and past performance, as well as providing the necessary services for the unemployed. A software package entitled "Choices" has been selected for use and preparations are underway to begin the new applications in the coming months.

Within the employment counseling package, the establishment of a number of counseling centers around the country is planned and is in the pipeline. The Turkish Government presently stresses the idea of increasing the number of entrepreneurs in the country and has published some booklets on this matter, one of which is entitled "Guidebook for Setting Up One's Small Business."

All of these publications accentuate employment creation through the establishment of small businesses and list the full range of assistance services available by the Government for those having such businesses in mind, whether technical or financial in nature.

3. Initiation of a Number of Supportive Agencies

The Ministry of State, in order to create a suitable environment for the potential entrepreneurs, has set up a trade company called the Enterprise Support Agency, which is attached to the Employment Foundation. This agency has initially decided to provide support to the newly starting small firms dealing with the following businesses:

a. Those setting up software houses,

b. Small firms, providing education in management techniques,

c. The firms working as project development institutions,

d. Those involved in the management of energy sources and energy conservation.

The Enterprise Support Agency will also assist in the provision of various support and guidance activities to small business enterprises and also in the development of employment counseling and guidance services to the needy.

One other productive undertaking of the Ministry has been the initiation of Science Parks or Innovation Centers at appropriate locations in the country, through collaboration with some high-tech companies and the existing universities. Although this project is still in the developing stage, it gives much hope for productive work both in innovative applications of new technologies and in the area of employment creation.

One of the leading research agencies of Turkey, which is under the supervision of the Ministry of State, has extended its assistance and technical support activities to small industrial firms to cover the following:

a. Provision of needed information and guidance,

b. Intensive advice on practical matters,

c. Assistance in research and orientation,

d. Help in matters regarding know-how.

The Ministry is working towards setting up a Venture Capital Fund to assist the small firms operating in new technology areas financially, to carry out the necessary research and development activities adequately in regard to design, production and quality control. Another way of assisting is considered to be through the establishment of a source called the Public Partnership Fund.

A publicly owned bank for mining, Etibank, was encouraged by the Ministry to provide financial and other types of assistance to the would-be entrepreneurs. The bank now has a scheme through which she provides the following assistance to the owners of small enterprises involved in the promotion of the use of information technology in education and training:

a. Free use of computer time,

b. Purchase guarantee of the produced software.

The Ministry of State is also studying the existing problems in the collaboration of the locally situated small and medium size enterprises and the large companies undertaking a number of projects in foreign countries, problems dealing mainly with quality control and standardization assessment, and devising plans to eliminate the present barriers as well as increasing the levels of efficiency of such work and the quality of the products concerned.

4. Special Employment Projects

The Turkish Ministry of State has, in addition, looked into possibilities of job creation through the involvement of private sector companies and, with the help of a specialized British company, a private sector agency called Uşak New Technology and Employment Creation, Ltd. in the province of Uşak to create 1,000 new long-term jobs in the coming three years. This company will cooperate with the Employment Foundation and various public institutions as well as with local economic and social development agencies.

The Ministry has also assisted in the establishment of the Turkish Foundation for Carpet Making and in the initiation of a related project called Hand-Knotted Carpet Making Development Project. These were undertaken mainly to promote employment which will be difficult to obtain.

Another scheme started by the Ministry has been finding employment for older workers, who had no recent experience of formal learning or training, in public works through some labor-intensive construction techniques. This scheme is called Temporary Public Job Creation Scheme, and is receiving special attention and assistance from both International Labor Organization and the State Planning Organization of Turkey.

5. Information System for Labor Market

The Ministry of State for Employment Promotion has plans to establish a Labor Market Information System which will study country-wide details dealing with employment and unemployment matters and keep a follow-up system of statistical date regarding the labor market. The Ministry has reached agreement to work with the Middle East Technical University in Ankara in order to design an effective information system on employment statistics.

The Ministry has also established a source called Services Inventory System within the Turkish Scientific and Technical Research Agency, to provide a consulting pool to both public and private enterprises which will store and disseminate a wide range of information on the available specialized firms and individuals from whom these enterprises may receive expert assistance.

6. Measures for Job Preservation and Some Regulating Attempts

The Ministry considers the provision of assistance to the so-called "ailing companies" to be one of the efficient ways of job preservation. Because this may be a faster and less expensive way of employment promotion than in new job creation, and the studies carried out to save such companies may also help protect the others from similar consequences, the Ministry has designed an Employee-Enterprise Partnership Plan in which the Enterprise establishes a partnership with the Employees on an equity participation of 26 percent for Enterprise and 74 percent for Employees. Enterprise will guarantee that for the coming five years, for instance, it will buy goods and services resulting from the Partnership. At the end of the agreed period the Employees will become the owner of the Enterprise.

Another scheme proposed by the Ministry is aimed at ensuring the preservation of jobs, through rehabilitation of "ailing companies." Such companies are requested to sell 51 percent of their shares to a holding company, formed through partnership of public and private institutions, which will start a "salvation" operation that may include managerial takeover, if necessary. Following the completion of the operation, the holding company will be free to sell the shares bought previously.

In order to simplify the formalities needed to start a small business and to eliminate a number of existing legal barriers, the Ministry has designed a scheme to encourage the prospective entrepreneurs. By cutting down the unnecessary red tape in such an attempt, the Ministry also tried to reinstate the public's confidence in governmental institutions. Presently the Ministry is working on an Employment Promotion Fund Act, an effort that existed for some time in highly industrialized countries, in order to ensure legally potential sources of finance for job-creation schemes.

B. Improvement Activities Directed at Vocational and Technical Education at Secondary and Lower Levels

The Ministry of National Education, Youth and Sports signed a Project Agreement with the World Bank in 1985, which is called the Industrial Schools Project, with the aim of developing vocational and technical education at secondary education level. The project took effect in July 1985 and in the following weeks the preparations were started to sign a contract with an organization that would serve as Technical Consultant to the Ministry of Education.

1. Industrial Schools Project of the Ministry of National Education, Youth and Sports

The objectives of the Project are to improve the quality and increase the quantity of trained industrial manpower, to improve the quality of existing curricula and training materials, to assist in developing programs for new trade specializations and to improve the planning and managerial capacity of the General Directorate of Technical and Vocational Education.

The Project consists mainly of the following four parts:

Part A: Equipping and Refurbishing Industrial Schools

The assistance to be provided under this group includes refurbishment and equipment procurement plans and activities for 39 industrial schools.

Part B: Development of Curricula and Related In-service Training Programs for Selected Trade Specializations

The activities planned under this heading comprise of technical consultancy services of 116 man/month duration, and fellowship training programs of 788 man/month duration.

The specific objectives in this group may be stated as follows:

a. Development and improvement of curricula for existing trade specializations and the provision of training materials for them.

b. Preparation of new curricula for new trade specializations, and provision of training materials for them.

c. Development and implementation of in-service training programs for existing and new trade specializations, and provision of fellowship training for suitably qualified staff in project management, equipment planning and management of schools.

Part C: Translation and Production of Technical Textbooks

These activities will cover the following:

a. Translation and printing of technical textbooks to be used as reference and training materials by the General Directorate.

b. Development within the General Directorate of an institutional capacity for textbook translation and production through the provision of fellowship training in textbook translation, design and printing.

Part D: Project and Feasibility Studies

The activities placed under this heading include:

a. Studies on computer-aided learning, new program development, commercial schools training programs and adult training programs.

b. Studies to formulate proposals for cost control and cost recovery measures for the industrial school system with the objective of recovering amounts no less than the additional incremental costs arising from the Project.

The total amount allocated to the Project is 79.7 million dollars, of which 57.5 million is borrowed from the World Bank. The latter amount is to be paid back to the Bank in 17 years with varying interest.

The Technical Assistance portion of the Project was solved through signing a contract with the British Council on August 8, 1986. The total amounts for the contract were 1.726.732 U.S. dollars for technical assistance and 72.691.570 Turkish Liras for in-country expenditures.

The experts coming from the United Kingdom started their work at the end of September, 1986 and have noted some progress on curriculum development activities, as well as in the preparation of the equipment lists. 50 million dollars are reserved for equipment and materials, and the Ministry recently advertised to buy 20 million dollars worth of equipment with ILO helping as her adviser.

In the year 1986, 93 vocational teachers were placed in an intensive English Language program of some 700 hours, and 49 of these were sent abroad for further training in November, 1986.

2. A Wider Shot at Skills Training: Non-formal Vocational Training Project

This year the Ministry of National Education, Youth and Sports signed another loan agreement with the World Bank, which is entitled Non-formal Vocational Training Project. The objectives of the project are to assist the Ministry in increasing the supply of trained labour from non-verbal vocational training and in strengthening the capacity of the responsible institutions.

The new project which was published in the Official Gazette on March 21, 1987 comprise of two main parts:

Part A: Non-formal Vocational Training Program

The activities listed under this program are upgrading the organization and coordination of in-service training of instructors; regular assessment of training needs on the basis of labor market situation; development of procedures for skill testing and certification; development of courses in entrepreneurship skills, and execution of evaluation studies directed at the effectiveness of Non-formal Vocational Training Project.

Part B: Assistance for Non-formal Vocational Training Institutions and for Project Management

This group of activities include financing of programs for the provision of training equipment and materials and the construction of minor works for about 270 non-formal vocational training institutions; establishment of Production Revolving Funds in each of 200 institutions; assistance to Project Implementation Unit in equipment procurement and training fellowship services.

The total amount of loan is 58.5 million dollars. Presently the Ministry officials are working toward developing a short list for possible consultants. The amount allocated for consultancy services and fellowship training is 4.3 million dollars; and amount put aside for equipment procurement and purchasing of materials is 52.3 million dollars.

C. Developmental Activities at Post-secondary Vocational and Technical Education Level

The projections aimed at demands for technical manpower in Turkey within the next ten years indicate an additional need of 12,000 technicians every year. The fact that there are only some limited number of training programs in industry makes it mandatory for educational institutions to carry out this difficult task. It is with this thought in mind that the Council of Higher Education started the preliminary negotiations with the World Bank in the year 1982, which led to the signing of the Loan Agreement in 1984.

1. The Council of Higher Education - World Bank Technician Training Project

This developmental project which was entitled the Industrial Training Project was the first of the significant attempts of assistance by the World Bank to Turkey along industrial educational and training lines. The project aimed to help develop the capacities of three public institutions - the Council of Higher Education, the Industrial Training Development Center and the State Institute of Statistics. Of the total amount, which was 36.8 million dollars, 32,388,229 dollars were allocated to the Council of Higher Education, 3.62 million dollars to the Industrial Training Development Center, and 700,000 dollars to the Institute of Statistics.

Section A of the project which deals with the activities to take place under the supervision of the Council of Higher Education deals with two basic elements:

A. Providing technical assistance to the Council of Higher Education in curriculum development and instructor training; in strengthening the administration of pilot schools and in feasibility studies to be carried out for future extensions.

B. Providing assistance to the Council of Higher Education in the planning and implementation of a pre-service technician training program in eight pilot schools and in procurement of equipment; in facilitating the physical refurbishment activities and purchasing of necessary furniture.

Following the development of a short list and evaluations of the bids received for technical assistance services, toward the middle of May, 1985, a contract was signed by the Council of Higher Education with a Turkish Company called TEKSIS and subcontracts with the British Council and the RCA International Service Corporation to carry out the consultancy services in collaboration. Thus, the possibilities and potentials of the three countries were brought together for the benefit of planned improvement activities.

In the selection of the eight pilot higher vocational schools from various parts of the country, the adequacy of their physical setups and their relations with the local industries were taken into consideration. The eight pilot schools are:

Çankırı Higher Vocational School

Düzce " " "

Istanbul " " "

İzmir " " "

Iskenderun" " "

Kırıkkale " " "

Konya " " "

Malatya " " "

Since the priority was to be given to the export industries, the technical programs to be developed in these eight schools comprised of related engineering technology areas, which are as follows:

- Control and Instrumentation
- Communication
- Industrial Electronics
- Electrical Engineering Technology
- Mechanical Engineering Technology
- Airconditioning and Refrigeration
- Foundry Technology
- Agricultural Engineering Technology
- Computer Science
- Construction Technology
- Petroleum Technology
- Petro-chemical Technology

The total number of students to be enrolled in all of these technology areas in eight pilot schools were estimated to be around 2,700. Table III shows the expected total numbers of students to follow the above mentioned programs, over the Project years.

With the initiation of technical consultancy services around the middle of 1985, the necessary tasks for the project, which were to be carried out by the Coordinatorship of the Project, began to be executed in collaboration with a number of out-of-country and Turkish experts.

TABLE III

INDUSTRIAL TRAINING PROJECT

Projected Enrollment in Pilot Higher Vocational Schools by Main Subject

Subject	Malatya	Çankırı	Düzce	İskenderun	İstanbul	İzmir	Kırıkkale	Konya	TOTAL
Electrical									
Control and Instrumentation	30	30	30	30	30	30	30	30	240
Communications	30	30	30	30	30	30	30	30	240
Industrial Electronics	30	30	30	30	30	30	30	30	240
Electrical Technology	60	60	60	60	60	60	60	60	480
Mechanical									
Mechanical Technology	90	90	90	90	90	90	90	90	720
Air Conditioning & Refrigeration	30	30	30	30	30	30	30	30	240
Foundry Technology	--	--	--	30	--	30	--	--	60
Agricultural Technology	--	--	30	30	--	--	--	30	90
Construction Technology	30	30	30	30	--	30	30	30	210
Computer Programming	30	--	--	--	30	30	--	--	90
Petroleum Technology	--	--	--	--	--	30	--	--	30
Petrochemical Technology	--	--	--	--	--	30	30	--	60
TOTAL	330	300	330	360	300	420	330	330	2.700

All students will, in addition to their main subject, take courses in computer use, math, basic science, technical drawing, English and business applications.

The various activities planned covered physical refurbishment work, curriculum development, overseas training, equipment procurement and installation, and some feasibility studies for the future efforts.

Project Consultancy Services were planned for 30 months. A total number of 145 instructors, eight school managers and a number of administrative and technical personnel from the Council and the Project Administration have been planned to be trained abroad. Until this date, 135 instructors, 8 school managers, 16 administrative and technical personnel have been sent overseas for training.

As many as 10 new curricula have been developed for project technology areas. The first group of new curricula including mechanical, electrical and construction technology and industrial electronics areas went into implementation on September 22, 1986 in four pilot schools and the others are now being implemented at eight schools.

An Instructor Training Center is being established in Ankara in collaboration with Gazi University to train future instructors for higher vocational schools. In the future, The Project will also work closely with Technical Education faculties of Marmara and Firat Universities and Vocational Education Faculty of Gazi University.

The Project Coordinatorship and the foreign and local consultants work in close collaboration with industries in the development and final approval of the new technology programs, as well as in the assessment of the implementation activities. The various committees, formed jointly with industry include University-Industry Relations Coordinating Committee, Technical Committee and Curriculum Development Committees.

The procurement of equipment process was advertised internationally as well as in local publications on December 31, 1986 and until the closure day of March 30, 1987, as many as 200 firms from Turkey and all over the world had purchased bidding documents, and 88 firms had turned in proposals by the last day until 10:30 a.m. The bid opening process was started in the afternoon at 2:00 p.m. and was completed by 9:00 p.m. on March 31, 1987.

Special committees composed of administrative and technical elements have carried out the detailed examination of all the bids. Within four months after opening 16 firms were selected to represent the most suitable bids.

The World Bank and The Turkish Ministry of Finance have approved the evaluations and contracts were signed with all the winning firms. Now these firms are busily involved with plans of manufacturing or providing the purchased equipment.

2. The Continuation of the Improvement Attempts at Higher Vocational Schools: A Few Words about the Extension of Technical Assistance Activities

The present project is scheduled to terminate at the end of 1989. The technical assistance services were extended one more year, until the middle of November, 1988. In order to secure a continuity and prevent the development of a gap within developmental services, a feasibility and pre-investment study was done in 1986 on the Second Phase of the Project, which will turn an additional 20 higher vocational schools into Technician Training Centers. This phase is now in the works and negotiations are continuing with the World Bank officials. A new contract will be signed with the Bank, possibly in April, 1988.

The Second Phase will, in addition to improving the new 20 schools in various ways, will also provide pre- and in-service training programs for large numbers of instructors needed by the Ministry of State, Ministry of National Education, Youth and Sports, and for the Council's needs at post-secondary institutions. The estimated amount of the loan necessary for all these services is around 138 million dollars. The instructor training activities will be carried out in collaboration with three technical education and one vocational education faculties. A total number of 17,000 instructors will have to be trained for the Ministry of Education only.

In addition to the extension of the present improvement activities to the new 20 higher vocational schools, a set of new programs comprising tourism, textile, food technology, business and trade professions will also be developed in the same institutions.

The selection of the new group of 20 schools has already been completed and further work is now being done to complete the Staff Appraisal Report in order to start the final negotiations with the World Bank.

IV. Conclusion

As can be seen from this brief report on vocational and technical education in Turkey, numerous improvement efforts have been initiated in the country to facilitate the execution of several country-wide development plans prepared jointly by a number of Government Institutions, the leading one being the State Planning Organization. Most of these vocational education and training attempts seem to be addressing the present and future needs of the country for technical elements either at the starting, secondary or higher education levels. As time goes by, such needs and the possible answers both will have to be reassessed, under rapidly developing and changing conditions.

A significant matter to take notice, when all of these efforts are reviewed together, is the close collaboration needed among all related agencies and the necessary coordination of vocational education and training activities in such a way that every effort becomes a part of a complete and meaningful system. Presently a number of genuine attempts are being spent by the administrators of the various projects to realize a better-working and more productive coordination set up among the related public agencies in charge of the mentioned developmental attempts.

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